Ruoxiang Li

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EDUCATION

City University of Hong Kong   **Hong Kong SAR**
PhD Program on Computer Science (Advisor: Guan Nan)   *Aug. 2021 - July 2025 (Expected)*

The Hong Kong Polytechnic University   **Hong Kong SAR**
Research Assistant   *May 2020 - Aug. 2021*

National University of Defense Technology   **Changsha, China**
Master of Engineering in Computer Science and Technology (Advisor: Dianxi Shi)   *Sept. 2017 - Dec. 2019*

Northeastern University   **Shenyang, China**
Bachelor of Engineering in Internet of Things Engineering   *Sept. 2013 - June 2017*

RESEARCH INTERESTS

o Real-time Systems
o Robot Operating System (ROS)
o Autonomous Driving System

PUBLICATIONS

[1] **Ruoxiang Li**, Xu Jiang, Zheng Dong, Jen-Ming Wu, Chun Jason Xue and Nan Guan. *Worst-Case Latency Analysis of Message Synchronization in ROS.* IEEE Real-Time Systems Symposium (RTSS). 2023. (**CCF-A**)

[2] **Ruoxiang Li**, Nan Guan, Xu Jiang, Zhishan Guo, Zheng Dong, Mingsong Lv. *Worst-Case Time Disparity Analysis of Message Synchronization in ROS.* IEEE Real-Time Systems Symposium (RTSS). 2022. (**CCF-A**)

[3] **Ruoxiang Li**, Tao Hu, Xu Jiang, Laiwen Li, Wenxuan Xing, Qingxu Deng and Nan Guan. *ROSGM: A Real-Time GPU Management Framework with Plug-In Policies for ROS 2.* IEEE Real-Time and Embedded Technology and Applications Symposium (RTAS), 2023. (**CCF-B**)

[4] **Ruoxiang Li**, Zheng Dong, Jen-Ming Wu, Chun Jason Xue and Nan Guan. *Modeling and Property Analysis of the Message Synchronization Policy in ROS.* IEEE International Conference on Mobility: Operations, Services, and Technologies (MOST). 2023. (***Best Paper Runner-Up***)

[5] Chenhao Wu, **Ruoxiang Li**, Naijun Zhan, Nan Guan. *Modeling and Analysis of the LatestTime Message Synchronization Policy in ROS.* IEEE Transactions on Computer-Aided Design of Integrated Circuits and Systems (TCAD). 2024. (**CCF-A**)

[6] Chenhao Wu, **Ruoxiang Li**, Naijun Zhan, Nan Guan. *Improving the Reaction Latency Analysis of Message Synchronization in ROS.* IEEE 30th International Conference on Embedded and Real-Time Computing Systems and Applications (RTCSA). 2024.

[7] Xu Jiang, Dong Ji, Nan Guan, **Ruoxiang Li**, Yue Tang, Yi Wang. *Real-Time Scheduling and Analysis of Processing Chains on Multi-threaded Executor in ROS 2.* IEEE Real-Time Systems Symposium (RTSS). 2022. (**CCF-A**)

[8] **Ruoxiang Li**, Dianxi Shi, Yongjun Zhang and Ruihao Li. *Asynchronous event feature generation and tracking based on gradient descriptor for event cameras.* International Journal of Advanced Robotic Systems. 2021.

[9] Ruolin Sun, Dianxi Shi, Yongjun Zhang, Ruihao Li, and **Ruoxiang Li**. *Data-Driven Technology in Event-Based Vision.* Complexity. 2021.

[10] **Ruoxiang Li**, Dianxi Shi, Yongjun Zhang, Kaiyue Li and Ruihao Li. *FA-Harris: A Fast and Asynchronous Corner Detector for Event Cameras.* IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS). 2019. (**CCF-C**)

[11] Mingkun Wang, Dianxi Shi, Naiyang Guan, Tao Zhang, Liujing Wang and **Ruoxiang Li**. *Unsupervised pedestrian trajectory prediction with graph neural networks.* The IEEE International Conference on Tools with Artificial Intelligence (ICTAI), 2019. (**CCF-C**)

[12] Zhuoyue Yang, Dianxi Shi, Yongjun Zhang, Shaowu Yang, Fu Li and **Ruoxiang Li**. *Multi-UAV Collaborative Monocular SLAM Focusing on Data Sharing*. International Conference on Neural Information Processing. 2018. (**CCF-C**)

HONORS AND AWARDS

o Student travel grant for RTSS 2023 (Oct. 2023)

o IEEE MOST 2023 Best Paper Runner-Up (May 2023)

o SIGBED Student Travel Grant for CPS-IoT Week 2023 (Mar. 2023)

o Outstanding Thesis Award (Nov. 2019)

o Outstanding Postgraduate Award (June 2019)

o Outstanding Student Scholarship (2014 - 2017)

o Outstanding Graduate of Liaoning Province (Mar. 2017)

o The Asia-Pacific Robot Contest (Third Award, Best Design Award) (June 2015)

o Robot Competition for Undergraduates in Liaoning Province (First Award) (Oct. 2014)

Teaching

o CS3103 Operating Systems, 2024/25 Semester B, Tutor

o CS2115 Computer Organization, 2024/25 Semester A, Teaching Assistant

o CS3103 Operating Systems, 2023/24 Semester B, Tutor

o CS2115 Computer Organization, 2023/24 Semester A, Tutor

o CS3103 Operating Systems, 2022/23 Semester B, Teaching Assistant

o CS2115 Computer Organization, 2022/23 Semester A, Teaching Assistant

o CS3103 Operating Systems, 2021/22 Semester B, Teaching Assistant

o CS2115 Computer Organization, 2021/22 Semester A, Teaching Assistant

COMPETITION EXPERIENCE

ABU Robocon (Third Award, Best Design Award) *June 2015*
o **Team Task:** Independently design two robots cooperating to play badminton doubles.
o **Duties included:** Coordinate conversion, data acquisition and processing procedures based on Kinect for Windows v2 using C language, test the effect of illumination on Kinect depth camera.
o **Development Tools:** Halcon, Microsoft Visual Studio

Robot Competition for Undergraduates in Liaoning Province (First Award) *Oct. 2014*
o **Team Task:** Independently design two robots cooperating to collect the golf balls in the designated area and transport the collected balls to the starting position.
o **Duties included:** Robot control program design, control the robot to collect the golf balls by fixed route based on LPC1700 series Cortex-M3 micro-controller and μC/OSII system (using C language).
o **Skills & devices:** CAN communication, Gyroscope, Encoder